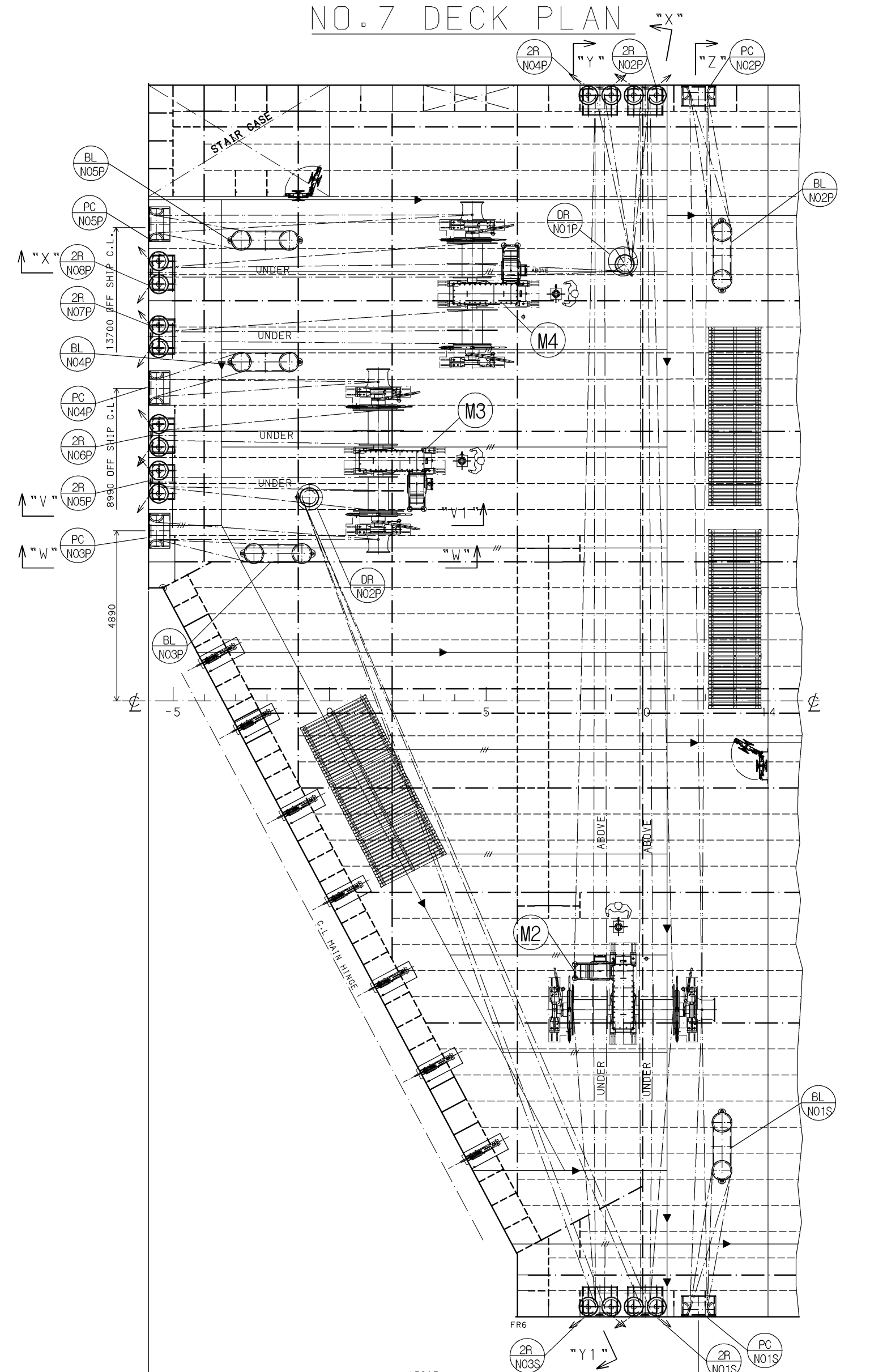
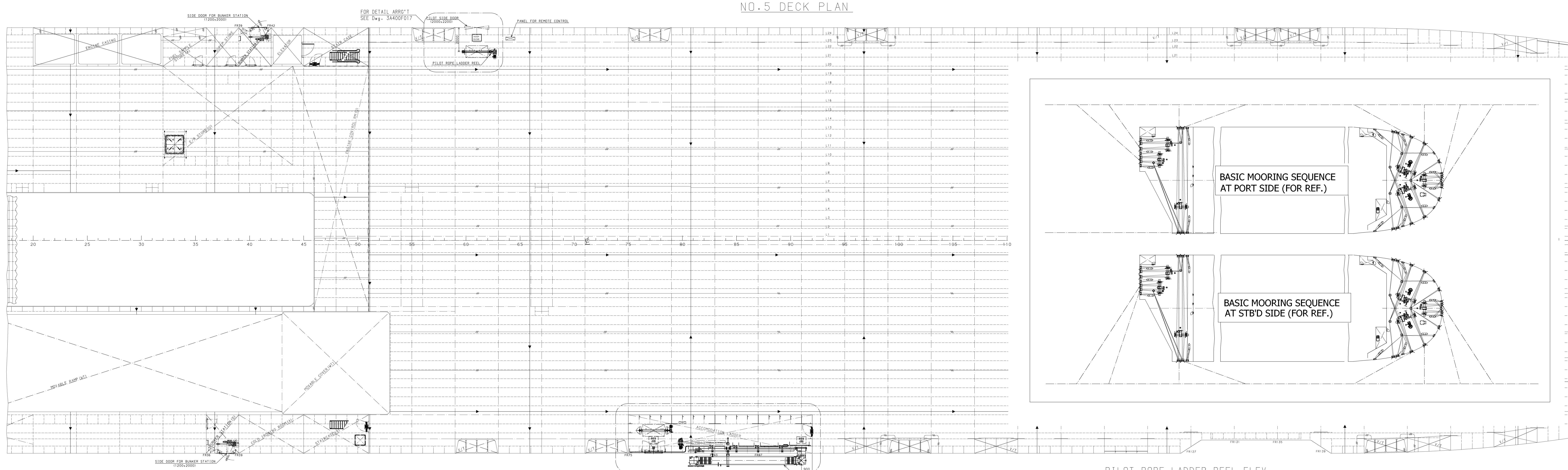
SILVER RAY

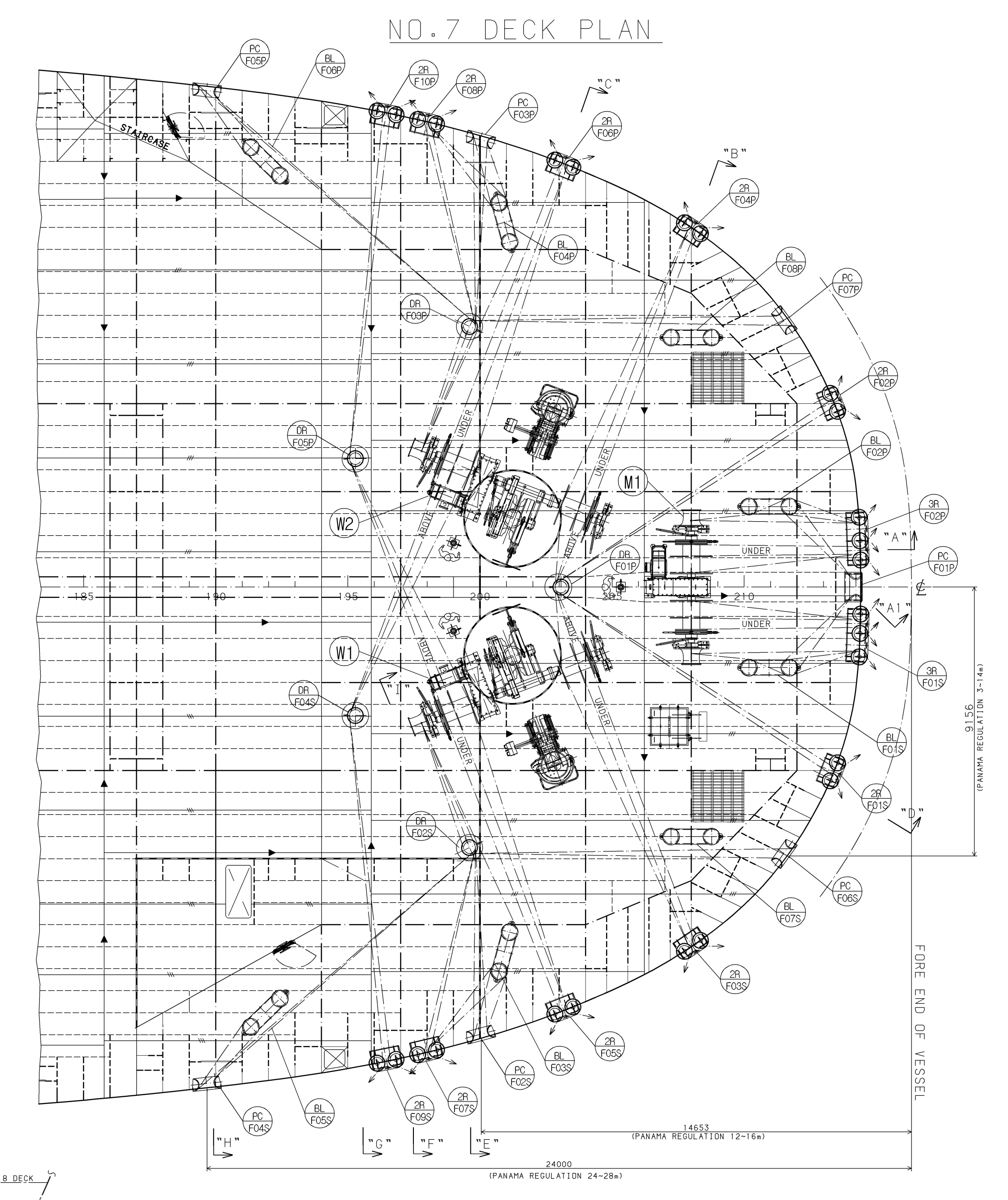
NO.7 DECK PLAN "A"

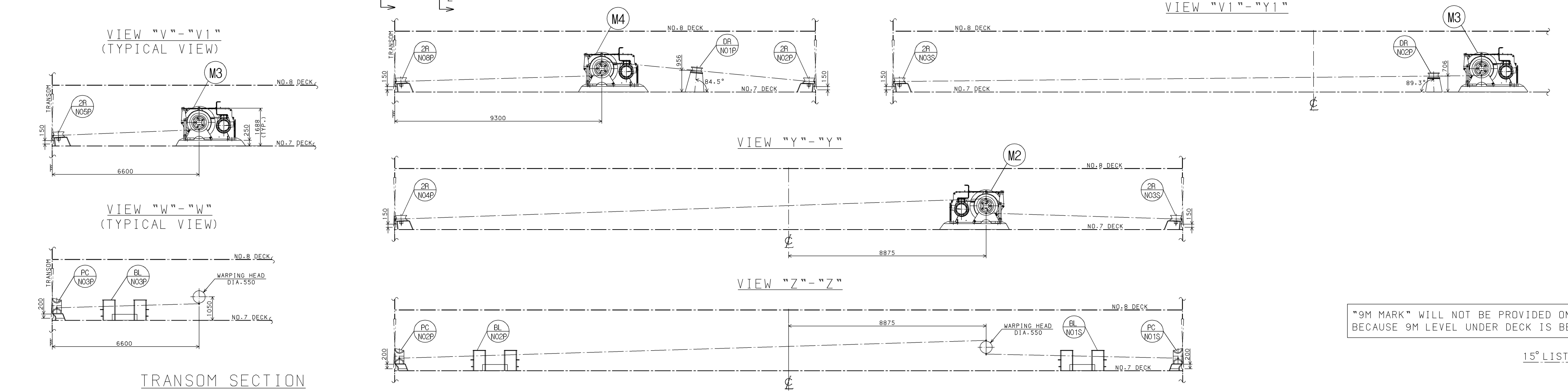


NO.5 DECK PLAN

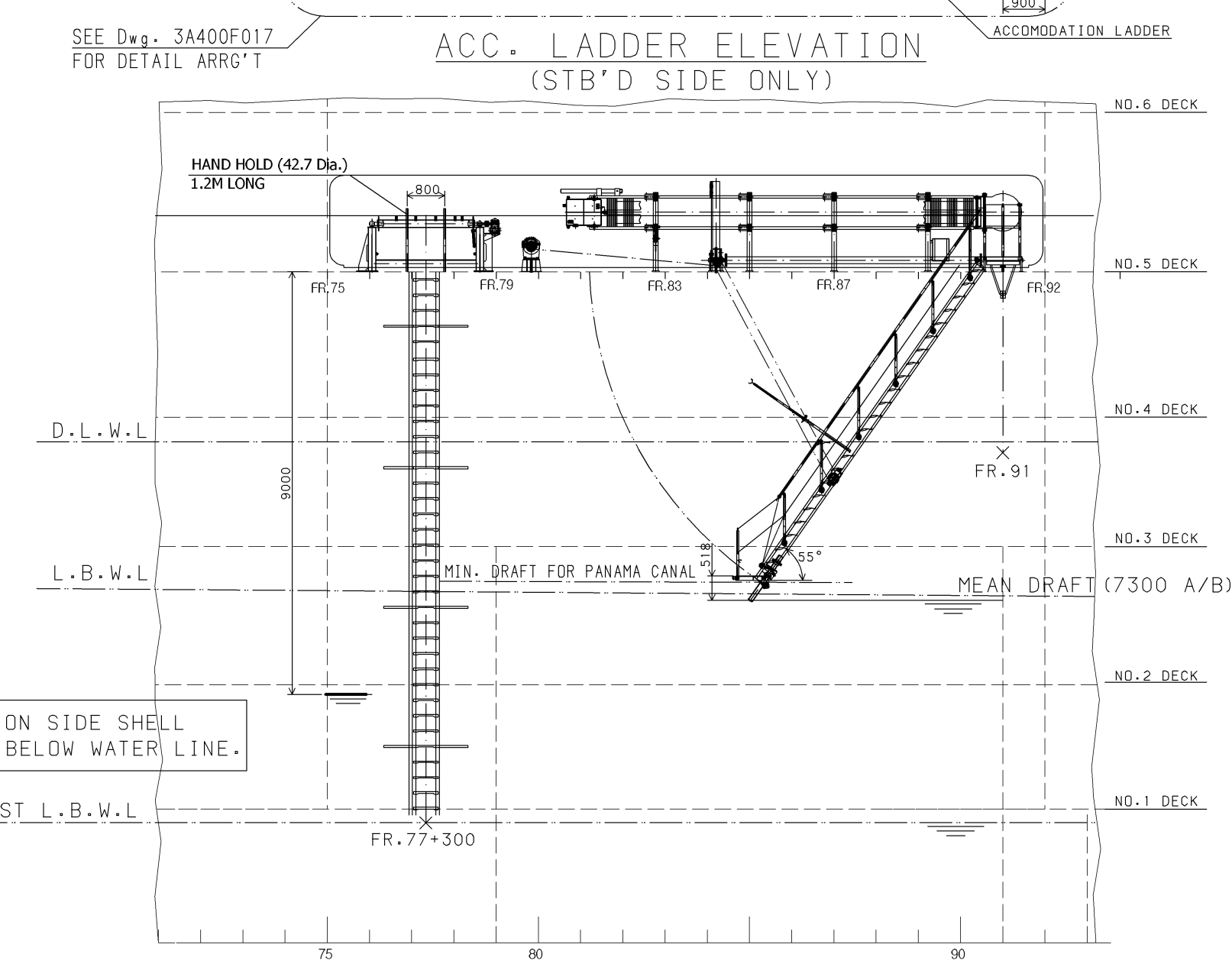


NO.7 DECK PLAN

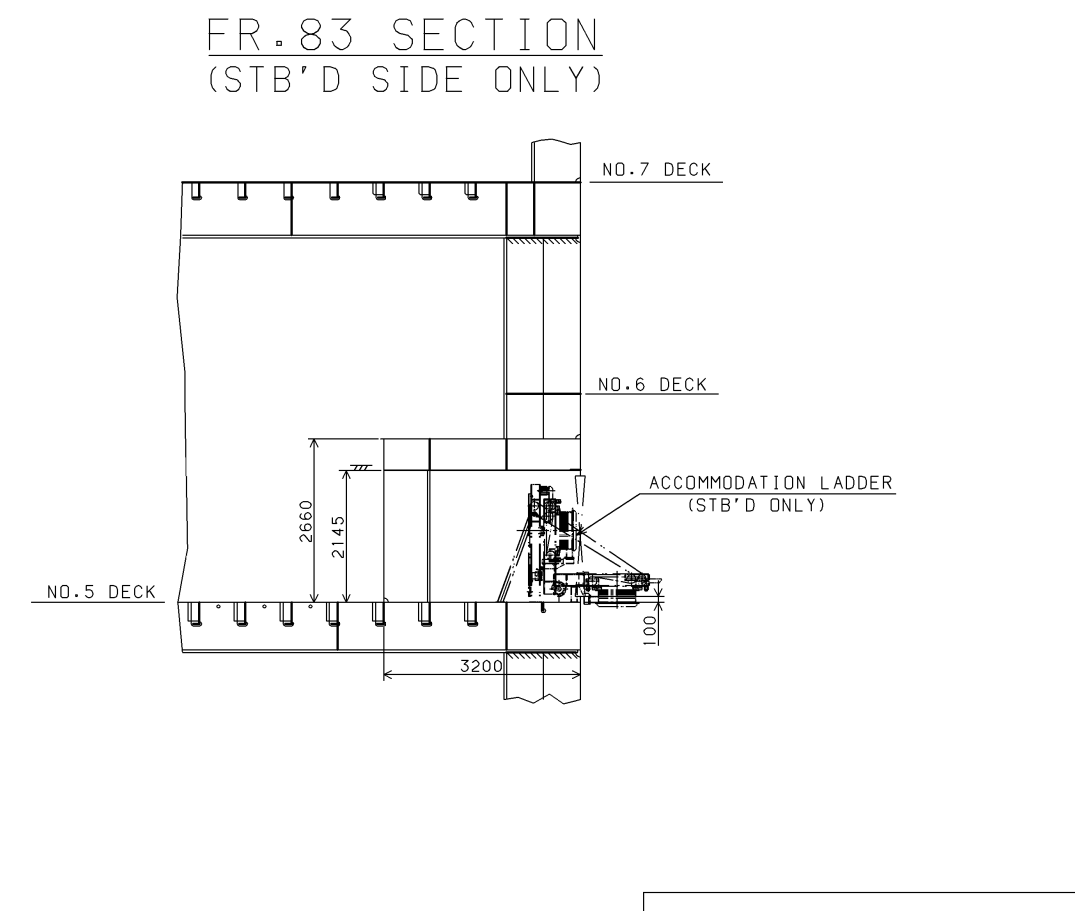




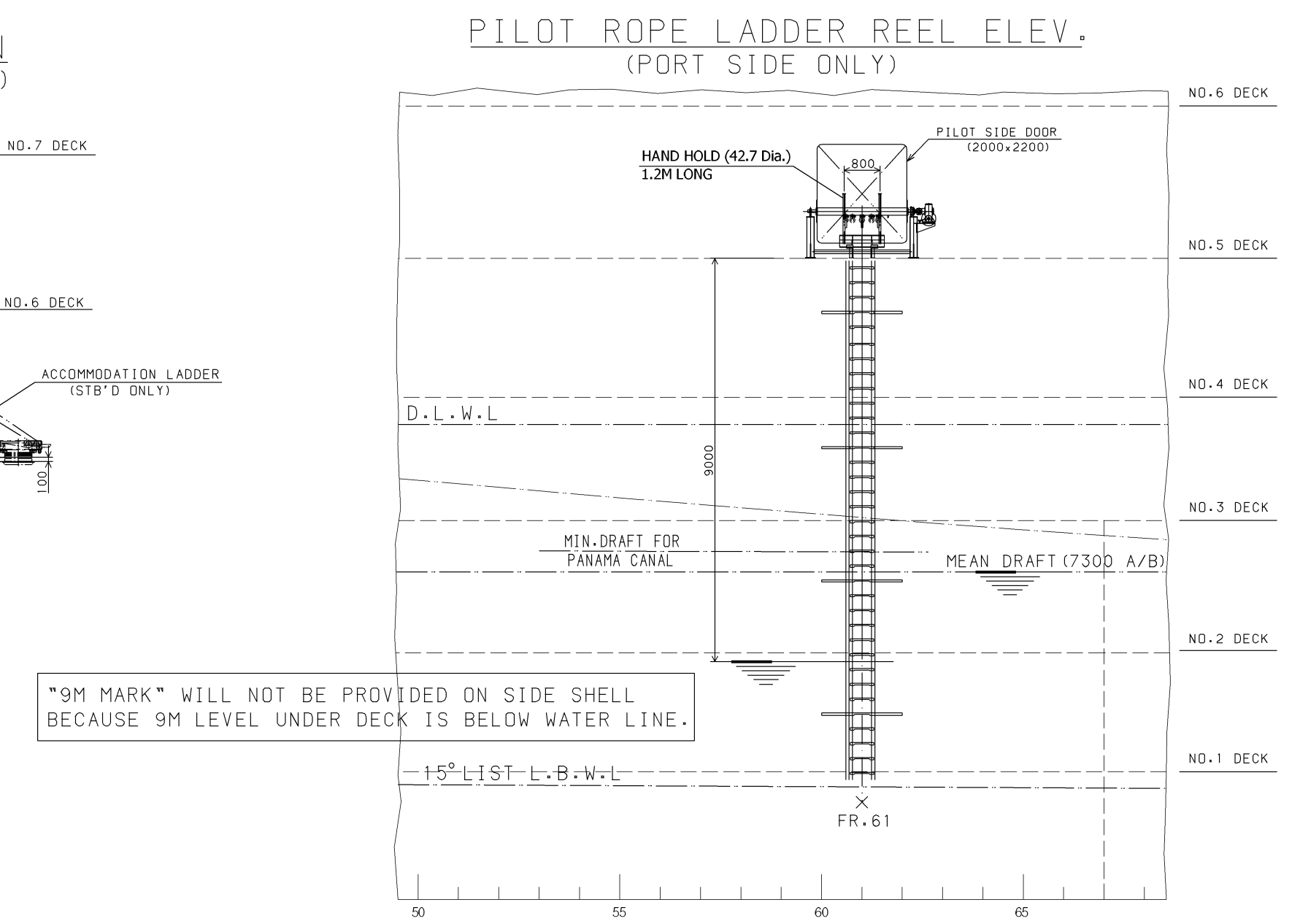
ACC. LADDER ELEVATION
(STB'D SIDE ONLY)

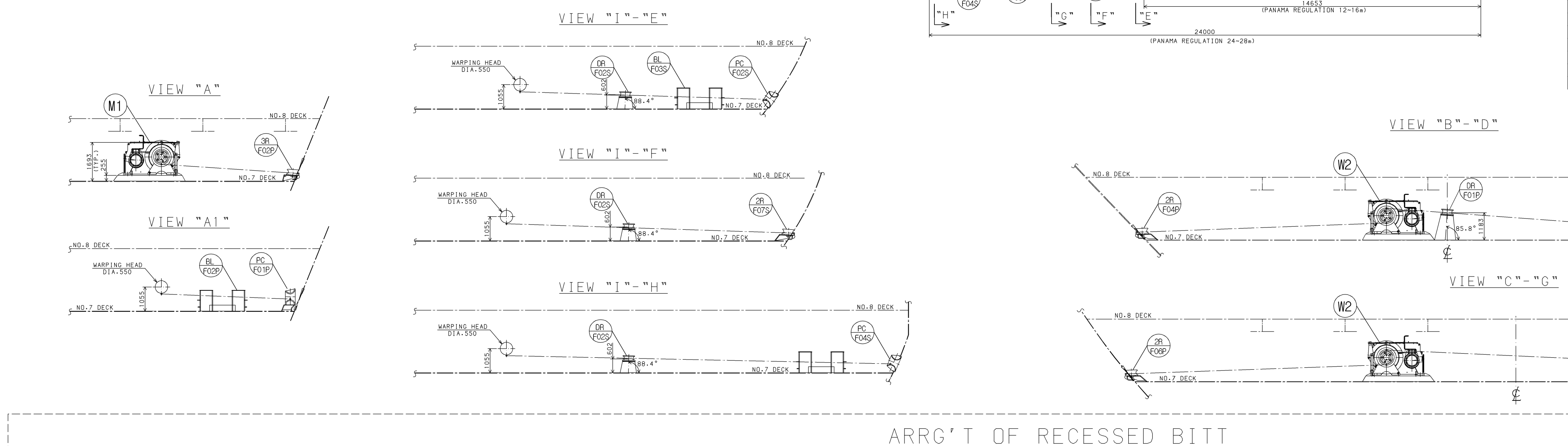

"9M MARK" WILL NOT BE PROVIDED ON SIDE SHELL
BECAUSE 9M LEVEL UNDER DECK IS BELOW WATER LINE.

FR.83 SECTION
(STB'D SIDE ONLY)



PILOT ROPE LADDER REEL ELEV.
(PORT SIDE ONLY)


"9M MARK" WILL NOT BE PROVIDED ON SIDE SHELL
BECAUSE 9M LEVEL UNDER DECK IS BELOW WATER LINE.



LIST OF MOORING FITTING ON FORE SHIP

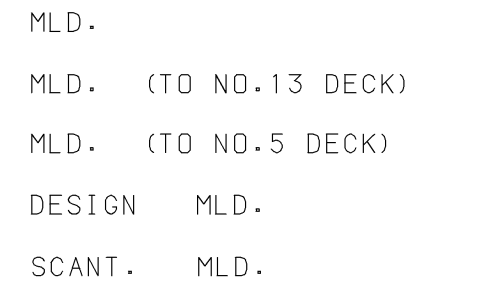
MARK NO.	DESCRIPTION	SIZE	P	θ°	Q'TY /SHIP	APPLICATION OF S.W.L	MARKING FOR S.W.L	REMARK
3R-F01S	3-ROLLER FAIRLEAD & SEAT	Ø400	97.5 TON	81°	1	78 TON	SWL78t	FOR MOORING
3R-F02P	3-ROLLER FAIRLEAD & SEAT	Ø400	97.5 TON	81°	1	78 TON	SWL78t	FOR MOORING
2R-F01S	2-ROLLER FAIRLEAD & SEAT	Ø400	97.5 TON	101°	1	78 TON	SWL78t	FOR MOORING
2R-F02P	2-ROLLER FAIRLEAD & SEAT	Ø400		101°	1			
2R-F03S	2-ROLLER FAIRLEAD & SEAT	Ø400		91°	1			
2R-F04P	2-ROLLER FAIRLEAD & SEAT	Ø400		91°	1			
2R-F05S	2-ROLLER FAIRLEAD & SEAT	Ø400		100°	1			
2R-F06P	2-ROLLER FAIRLEAD & SEAT	Ø400		100°	1			
2R-F07S	2-ROLLER FAIRLEAD & SEAT	Ø400		42°	1			
2R-F08P	2-ROLLER FAIRLEAD & SEAT	Ø400		42°	1			
2R-F09S	2-ROLLER FAIRLEAD & SEAT	Ø400		99°	1			
2R-F10P	2-ROLLER FAIRLEAD & SEAT	Ø400	↓	99°	1	↓	↓	↓
PC-F01C	PANAMA CHOCK WITH SEAT	500x250x428	TOW:112.5TON MOOR:97.5TON	35°	1	TOW: 90TON MOOR:78TON	SWL90t	FOR PANAMA TOW'G & MOORING
PC-F02S	PANAMA CHOCK (WALL MOUNTING TYPE)	500x250x428		56°	1			
PC-F03P	PANAMA CHOCK (WALL MOUNTING TYPE)	500x250x428		56°	1			
PC-F04S	PANAMA CHOCK (WALL MOUNTING TYPE)	500x250x428		41°	1			
PC-F05P	PANAMA CHOCK (WALL MOUNTING TYPE)	500x250x428		41°	1			
PC-F06S	PANAMA CHOCK (WALL MOUNTING TYPE)	500x250x428		55°	1			
PC-F07P	PANAMA CHOCK (WALL MOUNTING TYPE)	500x250x428	↓	55°	1	↓	↓	↓
BL-F01S	BOLLARD	Ø550	TOW:112.5TON MOOR:97.5TON		1	TOW: 90TON MOOR:78TON	TOW:SWL90t MOOR:SWL78t	FOR PANAMA TOW'G & MOORING
BL-F02P	BOLLARD	Ø550			1			
BL-F03S	BOLLARD	Ø550			1			
BL-F04P	BOLLARD	Ø550			1			
BL-F05S	BOLLARD	Ø550			1			
BL-F06P	BOLLARD	Ø550			1			
BL-F07S	BOLLARD	Ø550			1			
BL-F08P	BOLLARD	Ø550	↓		1	↓	↓	↓
DR-F01P	DECK STAND ROLLER	Ø400	97.5 TON	97°	1	78 TON	SWL78t	FOR MOORING
DR-F02S	DECK STAND ROLLER	Ø400		107°	1			
DR-F03P	DECK STAND ROLLER	Ø400		107°	1			
DR-F04S	DECK STAND ROLLER	Ø400		147°	1			FOR MOORING
DR-F05P	DECK STAND ROLLER	Ø400	↓	147°	1	↓	↓	FOR MOORING
W1	WINDLASS/MOORING WINCH	30TONx15M/MIN			1			NON AUTO TENSION
W2	WINDLASS/MOORING WINCH	30TONx15M/MIN			1			NON AUTO TENSION
M1	MOORING WINCH	30TONX15M/MIN			1			NON AUTO TENSION

LIST OF MOORING FITTING ON AFT DECK & SHIP SIDE

MARK NO.	DESCRIPTION	SIZE	P	θ°	Q'TY /SHIP	APPLICATION OF S.W.L	MARKING FOR S.W.L	REMARK
2R-N01S	2-ROLLER FAIRLEAD	Ø400	97.5 TON	89°	1	78 TON	SWL78t	FOR MOORING
2R-N02P	2-ROLLER FAIRLEAD	Ø400		60°	1			
2R-N03S	2-ROLLER FAIRLEAD	Ø400		89°	1			
2R-N04P	2-ROLLER FAIRLEAD	Ø400		73°	1			
2R-N05P	2-ROLLER FAIRLEAD	Ø400		89°	1			
2R-N06P	2-ROLLER FAIRLEAD	Ø400		89°	1			
2R-N07P	2-ROLLER FAIRLEAD	Ø400		89°	1			
2R-N08P	2-ROLLER FAIRLEAD	Ø400	↓	89°	1	↓	↓	↓
PC-N01S	PANAMA CHOCK WITH SEAT	500x250x428	TOW:112.5TON MOOR:97.5TON	80°	1	TOW:90TON MOOR:78TON	SWL90t	FOR PANAMA TOW'G & MOORING
PC-N02P	PANAMA CHOCK WITH SEAT	500x250x428		80°	1			
PC-N03P	PANAMA CHOCK WITH SEAT	500x250x428		72°	1	↓	↓	↓
PC-N04P	PANAMA CHOCK WITH SEAT	500x250x428		77°	1	TOW:90TON MOOR:78TON	SWL90t	FOR PANAMA TOW'G & MOORING
PC-N05P	PANAMA CHOCK WITH SEAT	500x250x428	↓	81°	1	TOW:90TON MOOR:78TON	SWL90t	FOR PANAMA TOW'G & MOORING
BL-N01S	BOLLARD	Ø550	TOW:112.5TON MOOR:97.5TON		1	TOW:90TON MOOR:78TON	TOW:SWL90t MOOR:SWL78t	FOR PANAMA TOW'G & MOORING
BL-N02P	BOLLARD	Ø550			1			
BL-N03P	BOLLARD	Ø550	↓		1	↓	↓	↓
BL-N04P	BOLLARD	Ø550	TOW:112.5TON MOOR:97.5TON		1	TOW:90TON MOOR:78TON	TOW:SWL90t MOOR:SWL78t	FOR PANAMA TOW'G & MOORING
BL-N05P	BOLLARD	Ø550	TOW:112.5TON MOOR:97.5TON		1	TOW:90TON MOOR:78TON	TOW:SWL90t MOOR:SWL78t	FOR PANAMA TOW'G & MOORING
RB-001S	RECESSED TYPE TUG BITT	400A	TOW 112.5TON		1	TOW 90 TON	SWL 90t	FOR PANAMA TOWING
RB-002S	RECESSED TYPE TUG BITT	400A			1			
RB-003P	RECESSED TYPE TUG BITT	400A			1			
RB-004P	RECESSED TYPE TUG BITT	400A			1			
RB-005S	RECESSED TYPE TUG BITT	400A			1			
RB-006S	RECESSED TYPE TUG BITT	400A			1			
RB-007P	RECESSED TYPE TUG BITT	400A			1			
RB-008P	RECESSED TYPE TUG BITT	400A			1			↓
RB-009P	RECESSED TYPE TUG BITT	400A			1			PANAMA TUG BOAT
RB-010P	RECESSED TYPE TUG BITT	400A			1			PANAMA TUG BOAT
RB-011S	RECESSED TYPE TUG BITT	400A			1			FOR BUNKER BARGE
RB-012P	RECESSED TYPE TUG BITT	400A	↓		1	↓	↓	↓
M2	MOORING WINCH	30TONx15M/MIN			1			NON AUTO TENSION
M3	MOORING WINCH	30TONx15M/MIN			1			NON AUTO TENSION
M4	MOORING WINCH	30TONx15M/MIN			1			NON AUTO TENSION
DR-N01P	DECK STAND ROLLER	Ø400	MOOR:97.5TON	106°	1	MOOR:78TON	SWL78t	FOR MOORING
DR-N02P	DECK STAND ROLLER	Ø400	MOOR:97.5TON	66°	1	MOOR:78TON	SWL78t	FOR MOORING

MARK NO.	H	P
DR-F01P	1183*	97.5
DR-F02S,F03P	602*	48.75
DR-F04S,F05P	907*	97.5
DR-N01P	986*	97.5
DR-N02P	706*	97.5

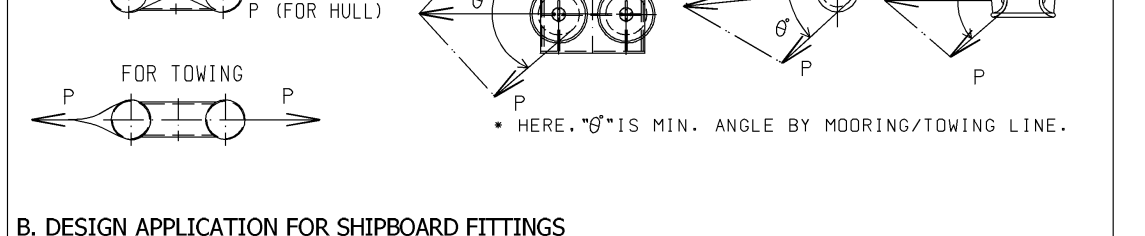
* : THIS DIMENSION WILL BE ADJUSTED.



PLAN HISTORY

DATE	REV.	MARK	DESCRIPTION	DRAWN	CHECKED	APPROVED
JULY 14, 2015	ORI		ORIGINALLY PREPARED FOR APPROVAL			
OCT. 30 2017	FIN.		FINALLY PREPARED FOR FINISHED PLAN			

A. SCHEME OF LOAD CONDITION FOR SHIPBOARD FITTINGS



* HERE, "θ°" IS MIN. ANGLE BY MOORING/TOWING LINE.

B. DESIGN APPLICATION FOR SHIPBOARD FITTINGS

ACC. TO MSC/Circ.1175 and IACS A2(REV.2)

1. SHIP'S EQUIPMENT NUMBER(E/N) : 4157.308
2. M.B.L(S) OF MOORING LINE BASED ON E/N : 66 TON
3. M.B.L(T) OF MOORING LINE PROVIDED TO THE VESSEL : 78 TON
4. IN CASE MBL OF ABOVE "3" IS HIGHER THAN THE ONE OF ABOVE "2", THE DESIGN LOAD ON MOORING LINE IS BASED ON ABOVE "3"
5. DESIGN LOAD(P) ON MOORING LINE : M.B.L(T) x 1.25 = 97.5 TON
6. DESIGN LOAD(F) ON SHIPBOARD FITTINGS : RESULTANT VECTOR BY (P) & (P), NOT MORE THAN (P) x 2

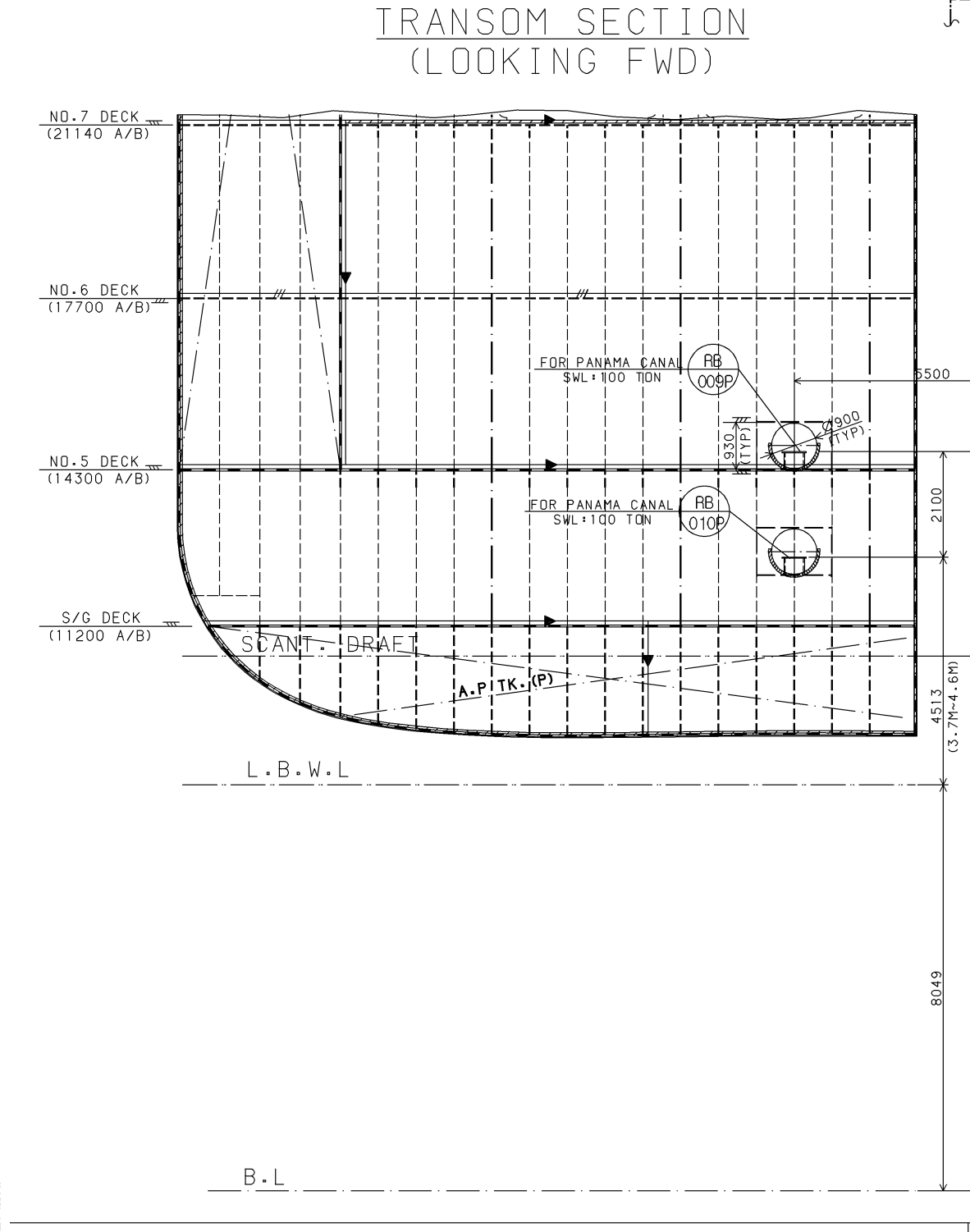
C. S.W.L APPLICATION

1. S.W.L MARKING : (P) x 80% = 78 TON
2. SWL SHOULD NOT EXCEED 80% OF DESIGN LOAD(P)
3. MBL(T) OF MOORING LINE WILL BE MARKED ON THE FITTING AS S.W.L FOR FITTING.
4. IN CASE THERE ARE ANY SPECIFIC RULES/REGULATIONS BY AUTHORITIES, THE DESIGN LOAD(P) & SWL CONDITION WILL BE APPLIED ACC. TO THE REQUIREMENTS OF AUTHORITIES.

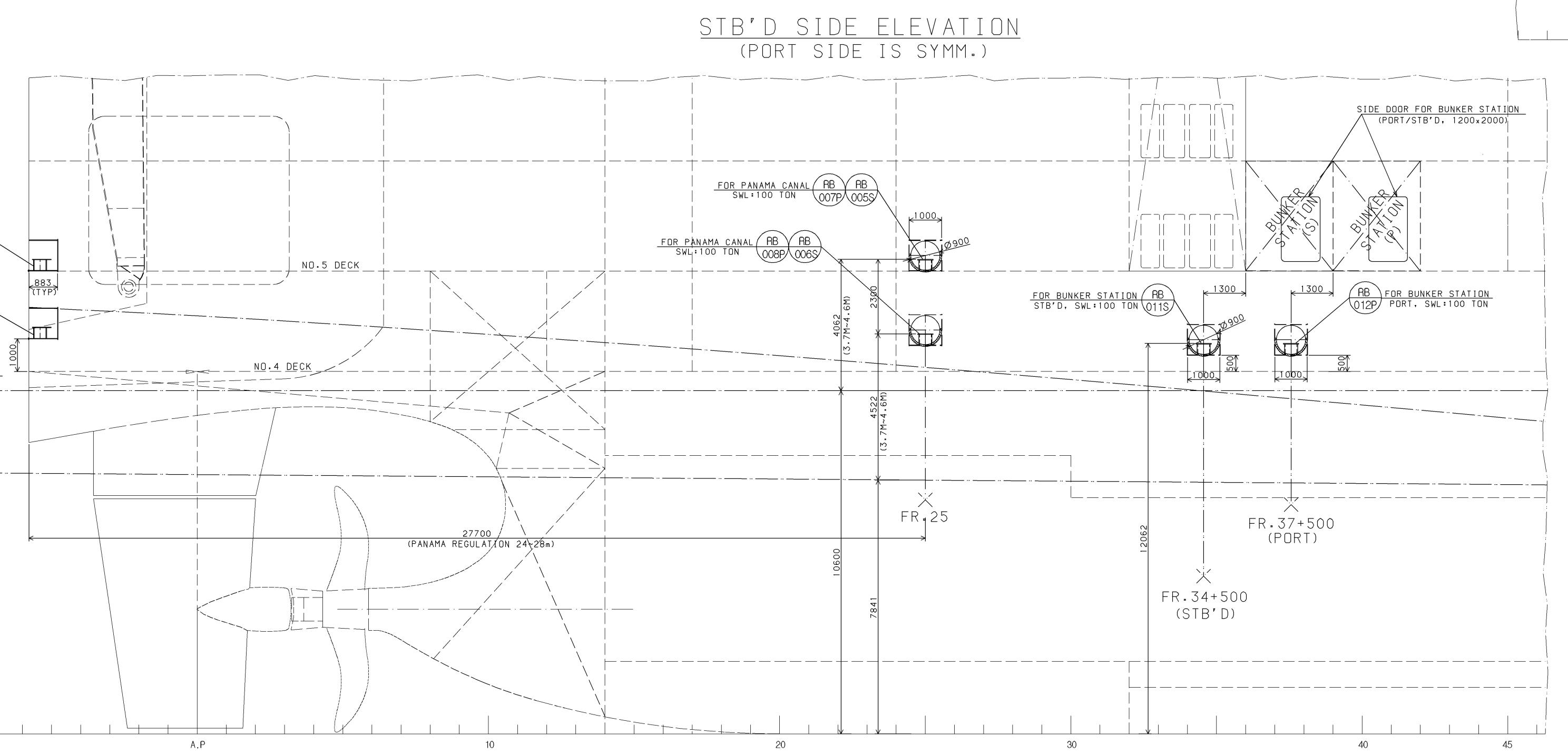
PRINCIPAL PARTICULARS

LENGTH	OVER ALL	Max.	199.99 M
LENGTH	BETW. PERP.		188.70 M
BREADTH	MLD.		35.40 M
DEPTH	MLD. (TO NO.13 DECK)		36.25 M
DEPTH	MLD. (TO NO.5 DECK)		14.30 M
DRAFT	DESIGN MLD.		9.00 M
	SCANT. MLD.		10.60 M
CLASS			DNV
EQUIP'T NUMBER			4157.308

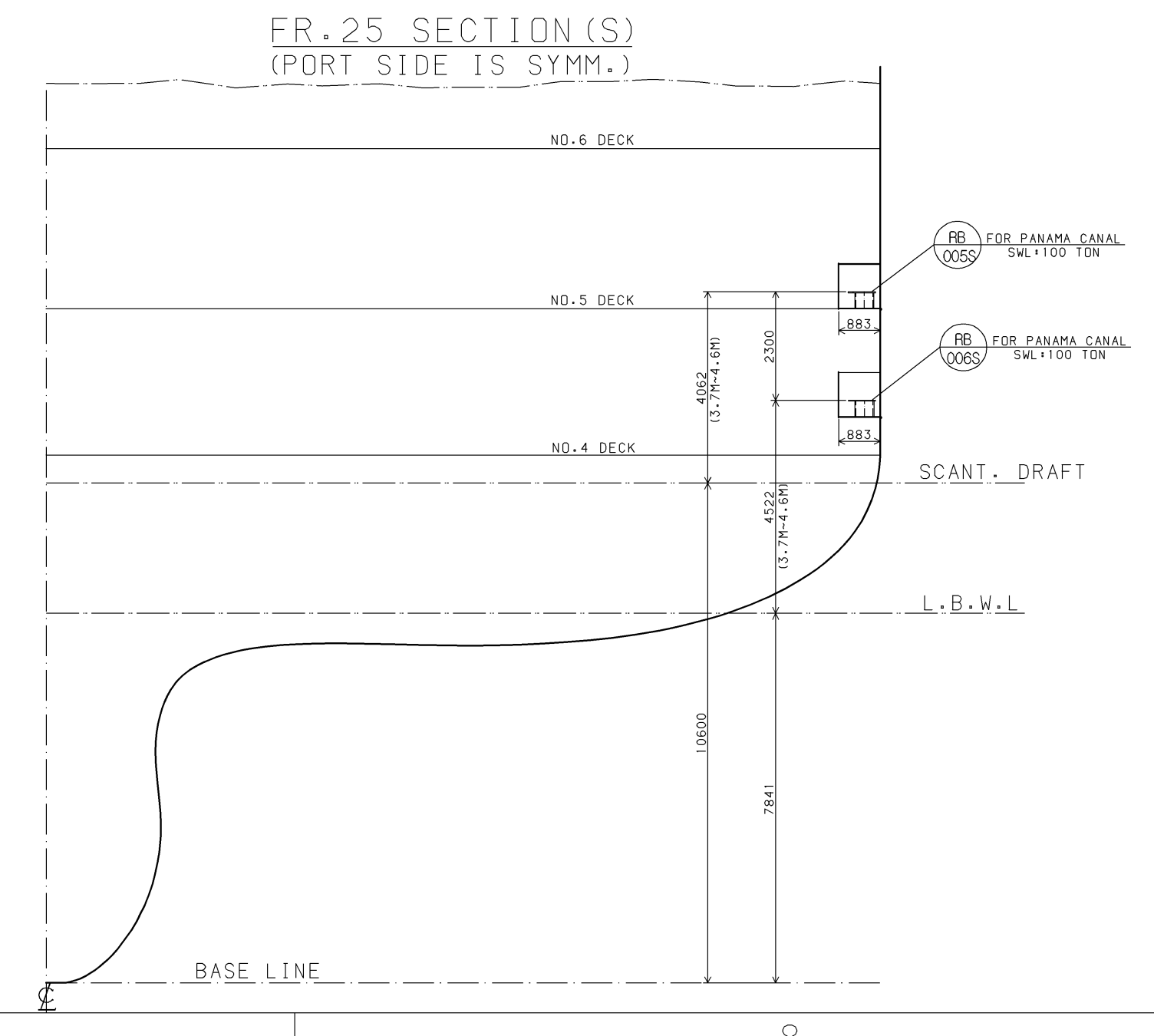
TRANSOM SECTION
(LOOKING FWD)



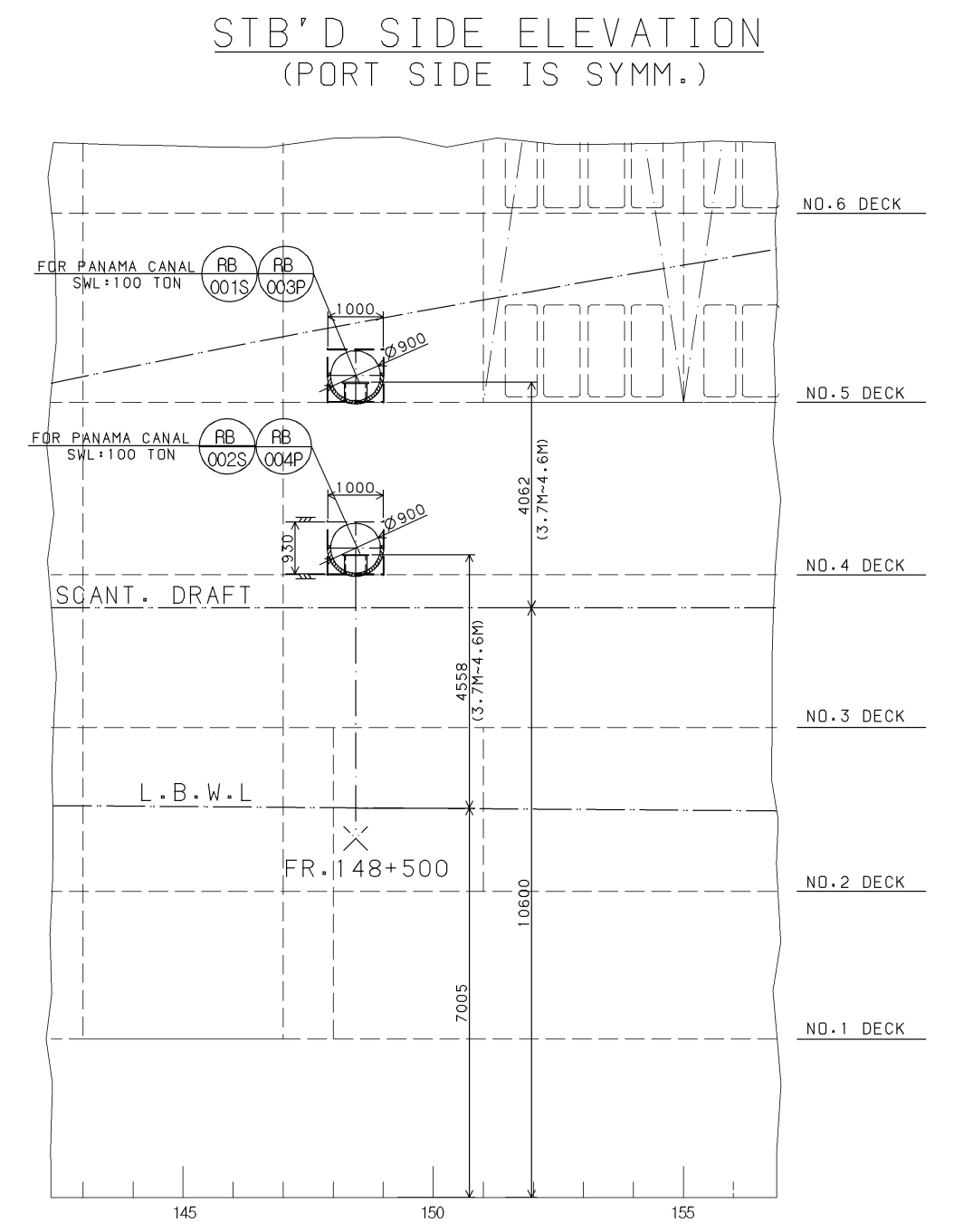
STB'D SIDE ELEVATION
(PORT SIDE IS SYMM.)



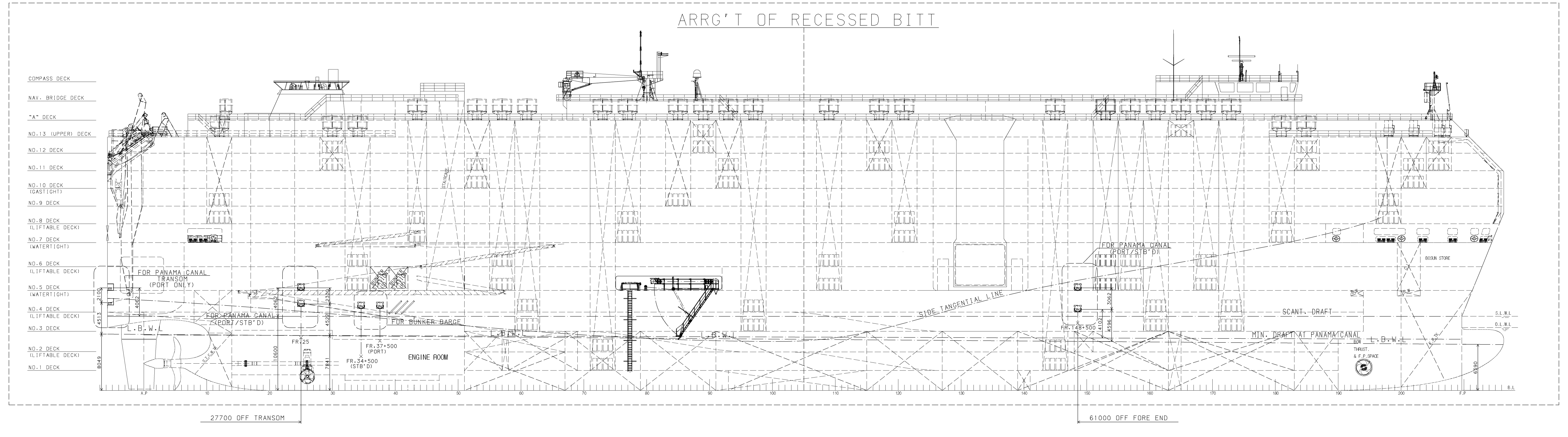
FR.25 SECTION(S)
(PORT SIDE IS SYMM.)



STB'D SIDE ELEVATION
(PORT SIDE IS SYMM.)



ARRG'T OF RECESSED BITT



NOTE

1. BASICALLY MOORING FITTINGS TO BE SYMMETRICALLY LOCATED ABOUT SHIP CENTER LINE EXCEP AS NOTED.
2. THE ARRANGEMENT DRAWING OF ROPE RUBBING BAR(60 X 30 H.R.B) TO BE PROVIDED BY HULL DESIGN DEP'T.(MAT'L : SUS304)

   ROPE RUBBING BAR WILL NOT BE PROVIDED FOR SHIP'S PARALLEL BODY.
3. MOORING ROPE : TIPTO WINCH LINE ROPE 62mm DIA.(B.S 78 ton) x 200M x 12sets
4. THIS PLAN SHOWS THE LAYOUT OF MOORING FITTING.
   THE FITTINGS SHOWN ON THIS PLAN CAN BE CHANGED AT THE DETAIL DESIGN STAGE SLIGHTLY.
5. DOUBLE CONTINUOUS FILLET WELDING TO BE CARRIED OUT AS FOLLOWS ECXEPT AS NOTED.

* THE LEG LENGTH OF FILLET WELDING

MATERIAL THICKNESS	4.5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
LEG LENGTH	4.0	5.0	5.0	5.0	5.0	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5

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DEP'T NO. 5630	DEP'T NAME HULL OUTFITTING DESIGN DEP'T	SHIP TYPE 7,700 UNIT CLASS PURE CAR AND TRUCK CARRIER
TEL.NO. 3837	SHIP NO. 8151 / 8152	SHIP NAME
DATE OCT. 30. 2017	APPROVED J. H. YUN (T.3831) CHECKED J. S. HA (T.3836) DRAWN J. Y. JEONG (T.3837)	NAME OF DRAWING ARRG'T OF MOORING SYSTEM FOR PANAMA CANAL
HMD	HYUNDAI MIPO DOCKYARD CO., LTD. ULSAN KOREA	SCALE 1/100 · DRAWING NO. 3A000F001 · REV. NO. FIN.
		CONSOLIDATED NO. F-2

A0-G12(2510x840)